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Simulated learning environment (SLE)   
integration and development project for the Loddon Mallee region

Background

Nurpara Township Simulation Day

The Nurpara Simulation Days were held at locations within La Trobe University Bendigo. The paramedicine simulated car crash space, nursing simulation clinical learning units, the simulated residence and various general access sites in close proximity to the Health Science building. The event was held over two days in May, 2013. The event was developed under the auspice of the Simulated Learning Environment (SLE) integration and development project for the Loddon Mallee region.

Problems/drivers

The focus of the simulation exercise was to foster an understanding of roles and team communication between nursing and paramedicine clinicians at an undergraduate level for them to have a clearer understanding for their clinical practice. The national standard tool for communication ISBAR was the framework outlined to students as one of the learning outcomes.

Arriving at a solution

It was identified that health science students work together in common first year then part ways to their individual clinical groups and do not have the opportunity to work together interprofessionallly prior to clinical practicum. The solution was to conduct interprofessional scenarios to develop these skills, using a fictitious township of Nurpara as the setting. After discussing the complexities of working with many disciplines from a logistical perspective, the decision was made to begin with nursing and paramedicine then looking to forward build from there.

The town of Nurpara was created. The town of Nurpara is situated in rural Victoria. Its primary industry is wheat farming and although it is a small town, it provides a stop-over point for travellers heading to Sydney.

There is a small local hospital that services a population of approximately 8000 people. The hospital mainly deals with low-acuity patients and incorporates an aged care hostel and rehabilitation unit. There is also a ten-bed emergency department; however, higher-acuity patients are generally rapidly transferred to the next major facility, a level 2 hospital in Fawketup, Victoria.

On the day of the simulation, the following occurred:

There had been a heat wave in Nurpara and surrounding regions, and bushfires had broken out on the road leading to Fawketup. Access to the nearest town was therefore blocked. Due to high winds, helicopter (HEMS) transport was not an option. Fixed-wing aircraft were prevented from landing due to fires that had started close to the aerodrome.

The town of Nurpara was not at risk of fire at this stage, but access to a major hospital was not possible until the fire in nearby Fawketup had been controlled.

The current medical services were:

Nurpara local hospital: ten beds (one of which was currently occupied by a patient awaiting an inter-hospital transfer to Bigenuff, a hospital two hours south of Nurpara)

Paramedic Staff: Two academic staff and five paramedic mentors

Nursing staff: Three academic staff & six clinicians

Doctors: There was one doctor on call in Nurpara. This morning the doctor travelled to Fawketup where he currently remained due to the closure of Fawketup-Nurpara road because of fires. He was accessible only by phone.

Ambulance: The day before was the final day of the rural ambulance seminar in Nurpara. As a result, there were currently six crews in Nurpara, each with their own emergency ambulance. They were also cut off from leaving the town in the short-term.

Outline of events

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| Time | Event | Location | Resources | Comments |
| 10:00 | 1A: Pt having an asthma attack  (patient and manikin) | Office area | Crew 1 | Manikin arrives at ED |
| 10:00 | 2A: Pt with chest pain ACS  (patient and manikin) | Office area | Crew 2  Crew 3 | Manikin arrives at ED  Pt initially conscious – arrests – ROSC on arrival hospital  Re-arrests later in ED |
| 10:03  10:06 | 3A: Two-car MVA  Pt unconscious in vehicle (manikin) | Car area | Crew 4 and 5 | Manikin arrives at ED |
|  | 3B: Two-car MVA Pt éjection multi-trauma (patient) | Car area | Crew 4 and 5 | Patient arrives at ED |
| 10:03 | 4A: wound dehiscence/ evisceration from local GP (patient) | Simulated GP clinic (nurse/receptionist  only staff present) | Crew 6 | Patient arrives at ED |
| 10:30 | 5A: Elderly pt fall, #NOF  (patient) | Outside | Crew 1 | Patient arrives at ED |
| 10:31 | 6A: Food poisoning pt (patient) |  | Crew 2 | Patient arrives at ED |
| 10:32 | 7A: Hypoglycaemic pt (manikin) |  | Crew 3 | Manikin arrives at ED |
| 10:36 | 8A: Vomiting coffee grounds – conscious collapse (patient) |  | Crew 4 | Patient arrives at ED |
| Around 10:36 | Agitated relative (patient) | In hospital ward | Requires de-escalation strategies | Security attendance |
| 10:32 | 9A: IHT complex transfer (manikin) |  | Crew 5 | Manikin in ED |

These times varied depending on crew availability but the intent was to be tight.

Implementation process

Students were emailed with a scenario explanation and intended learning outcomes in the day’s proceedings.

Simulated patients were sent scripts and briefed prior to the simulation and debriefed post-simulation.

Nursing and paramedic students were briefed separately on the day. Nursing students were orientated to the simulated emergency department and student nurses were buddied up with registered practicing emergency staff. This was to maintain learner safety given the simulation exercise was such a high emotionally charged event. Students were given time to explore the simulated emergency department to feel comfortable and ask questions prior to the immersive simulation commencing.

Paramedic students were briefed in their area. They carried out usual equipment checks, were given a radio and paired into crews. There were six crews all together, each crew paired with a paramedic mentor to ensure safe learning.

The simulation itself was conducted over two hours. The calls came in fast and soon the simulated emergency department filled with patients via triage.

Ten patient cases were bought into the simulated emergency department and triaged accordingly. The scenarios were all planned and written in advance but all aligned with the same intended learning outcomes. A combination of simulation modalities was used: simulated patients and medium technology manikins with sim-pads. To increase fidelity, usual clinical equipment was used together moulage and manikin voices. There was no doctor available so all care was communicated via phone with the doctor who was caught out of town due to the fire. There was a doctor for the nurses to communicate with for realism.

We debriefed the nursing students using the GAS debriefing approach. Once each discipline finished (nursing and paramedicine) we debriefed separately within respective disciplines, after which we came together as a group and debriefed as a team. Simulated patients were also part of the debrief.

Outcomes

The two days of NURPARA simulations involved 154 hours delivered to professional entry students (nursing and paramedicine) and 210 hours delivered to other learners (ICU and ED clinicians, and registrars).

The key intended learning outcomes were:

* Handover using ISBAR
* Interprofessional practice and collaboration requiring good communication and sharing skills between disciplines
* Time management for paramedic crews and nursing staff

Decision making and problem solving with a team approach

This was an extremely valuable learning experience for all. As is often the case in simulation, it was the simple approaches that the students found challenging. Communication challenges such the language used by the different professions, were identified by the students as eye-opening and a valuable learning experience: e.g., one nursing student said to a paramedic student, “Just pick up the IDC and hook it on the bed.” “What’s an IDC? Can I touch that?” he replied. These are the great moments in simulation that cannot be predicted.

The students and faculty evaluated the day. Overall comments were positive and Nurpara has sparked great excitement to conduct this interdisciplinary simulation again. A majority of respondents strongly agreed that the simulation content was relevant to their clinical practice (87%). Approximately three-quarters of respondents strongly agreed that the simulation session encouraged reflection on practice (76.6%) and the simulation equipment and resources were sufficient to enhance learning simulation (74.5%). 71.7% of respondents strongly agreed that the simulation content reflected current National Standards and other peak body guidelines (e.g. Australian Resuscitation Council) and that the simulation content was relevant to my workplace context (e.g. rural/regional hospital).

Over half of respondents strongly agreed that they are more likely to consult the current evidence base as a result of attending the simulation (61.7%) and that the simulation enhanced confidence in dealing with a patient whose condition is deteriorating (66%). Almost three-quarters of respondents strongly agreed that they increased understanding of simulation as a learning method (72.3%) and are more likely to engage in simulated ‘practise’ situations to enhance clinical skills in future (74.5%).

As can be seen in Figure 1, teamwork was reported to be the aspect most useful to learning, followed by simulation content and interdisciplinary learning.

One aspect that many students noted they learnt from the simulation scenario was in relation to communication. Students reported that clear communication among the team and across the disciplines was important but was difficult to achieve under some circumstances. Students also stated that communicating with the patient is vital and learnt how to talk with patients while under stress:

“Always talk to patient and get their story not just medical obs” – Paramedic student

In addition to communication, students reported that handover was one aspect they learnt from the simulation scenario. Nursing students noted, among other things, how to handover to paramedics and the role of the paramedic in a hospital setting. Many paramedic students noted it was good to see what nurses do and learn how nurses prefer to receive handover. Many students stated that teamwork was what they gained from the simulation experience. They identified the importance of working with other professionals, working with other agencies and being able to interact with other disciplines. Finally, prioritising was another aspect which many students reported from the simulation scenario. They learnt the importance of prioritising the needs of the patient:

“The importance of working quickly recognising and prioritising” – Nursing student

Barriers

One of the main barriers to the running of the Nurpara scenario was the high cost of staff involvement. Sixteen sessional professional contracts had to be developed, written and supported to enable the training event.

Future Directions

Feedback included how beneficial the simulation day was and how it increased the participants’ confidence and consolidated their skills. Numerous people provided feedback that they wanted more scenarios and simulation events and the exclusive use of real people instead of manikins in the simulation scenario. This will be considered in the further development of the training program.

Looking forward, our aim is to include Monash medical students and other disciplines at La Trobe so as to have a doctor’s presence and expand our interprofessional undergraduate focus further with a whole-of-system approach.

Further information

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